

as they appear, giving extension of range, and, in important cases, the localities.

Gaylussacia dumosa T. & G., in a bog at Nottingham.

Gaylussacia resinosa glaucocarpa Robinson, is more abundant in the coast towns of Rockingham county than the type; the fruit is larger, juicier, and more generally esteemed.

Crantzia lineata Nutt. Abundant about the Great Bay in the Squamscot River, Exeter, and at New Market.

Sanicula canadensis L. Seabrook and Kensington, among deciduous trees.

Rhus venenata D.C., is too common in many swamps.

Polygala cruciata L. Quite common on moist brackish grasslands, near the marsh. Seabrook, Hampton Falls and Hampton.

Baptisia tinctoria R. Br. Common in sandy woods near the coast.

Genista tinctoria L. This beautiful pest has been met with only at North Hampton, where it covers a space of about a square rod by the roadside. It is rapidly spreading.

Lespedeza procumbens Michx. Nottingham, N. H., a few plants only.

Lespedeza reticulata Pers. Kensington and Nottingham; sandy hills under deciduous forest.

Lespedeza polystachya Michx. Nottingham and Kensington, with the last.

Medicago Lupulina L. Not uncommon.

Medicago arabica All. Quite plentiful in a cultivated field at South Hampton. Not elsewhere observed.

Cassia nictitans and *Strophostyles* approach the line at Amesbury and may be expected in the state.

Two trees of *Acer platanoides* in a cemetery at Seabrook have started a numerous colony, but the saplings are not allowed to thrive. The seeds are spread broadcast by high northwest winds, and often travel one eighth of a mile, but as the soil is all cultivated none survive save in fence rows. Doubtless these will persist.

SEABROOK, N. H.

CLEISTOGAMY IN LINARIA CANADENSIS.

J. R. WEBSTER.

IN August, 1898, I noticed at Milton, Mass., a plant of *Linaria Canadensis* that produced cleistogamous flowers only. In 1899, three

plants appeared within five or six feet of the spot where the first was seen. These were examined almost daily from April to October, and were seen to produce flowers abundantly, which were all cleistogamous. No other plants of this species were noticed in the neighborhood of these in either year. They grew in soil that was not very rich, and was composed of gravelly loam with a small addition of material from a peat meadow. They attained a height of twenty to twenty-four inches, developing branched racemes, some of which were a foot or more in length. Two of the plants branched from the bottom. They were exposed to the sun in the morning, but were shaded in the latter part of the day.

The closed corollas averaged about one-sixteenth of an inch in height and about one-twentieth of an inch in diameter at the base. They were closely contracted around the four anthers, and were compressed into a little knot at the top. The expanded bases of the filaments were confined within so small a circle that they coalesced, forming a small corona within the corolla. The corollas were white, with a faint blue tinge, slightly inclined to pink in the two or three cases in which a short spur was produced. Almost all the flowers were spurless. As soon as a corolla was pushed above its calyx by the growth of the ovary, it was separated from the latter and dropped. The flowers produced seeds.

Since my attention was first drawn to the occurrence of cleistogamous flowers in *Linaria Canadensis*, I have noticed them in racemes which bore also fully developed flowers on plants of this species growing in other localities. Mr. E. L. Rand, Mr. Walter Deane, and others have also noticed them. Several authors describe the plant as frequently having flowers with no corolla, or with a spurless corolla.

In Contributions from the U. S. Herbarium, Vol. III., No. 8, p. 517, Rydberg records from the Black Hills of South Dakota a form of this species: "Very slender and depauperate, apparently with cleistogamous flowers. The same form has also been collected in Nebraska by Rev. J. M. Bates, of Valentine."

Mr. T. S. Brandegee states in *Zoe* for June, 1900, p. 13, that he has noticed "a multitude of cleistogamous flowers on the lower part of the main and the whole length of the many side branches" of *L. Canadensis*, Dum., as it grows about San Diego.